

REMARKS

The above-captioned patent application has been carefully reviewed in light of the non-final Office Action to which this Amendment is responsive. Claims 1-19 have been canceled in favor of new Claims 20-36 in an effort to clarify and particularly point out that which is regarded as the invention. To that end, it is believed no new matter has been added.

Each of original Claims 1-19 have been rejected based on certain prior art (Muschelknautz et al. – U.S. Patent No. 3,759,578) under 35 USC §102(b). The pending claims have also been rejected based on 35 USC §112, second paragraph, for indefiniteness. It is believed new Claims 20-39 cure each of the above-noted rejections and reconsideration is therefore respectfully requested.

Turning first to the Section 102 rejection, Applicants herein respectfully point out that in order to anticipate under the Statute, each and every claimed limitation must be found or its equivalent in the single cited reference. Those limitations that are not found in the reference must be notoriously well known to one of sufficient (e.g., ordinary) skill in the field of the invention.

The present invention is directed to the problem of pneumatically or hydraulically conveying bulk material by a pipe conveyor wherein a reduction of energy is achieved by the conveying process.

As noted throughout the present specification, the structure according to the present invention results in a relatively smooth deflection of the conveying flow, such that fewer turbulences are generated. To accomplish same, Applicants utilize a number of flow resistance disks as provided within openings of an inner pipe, the inner pipe being disposed within the conveying line to maximize the amount of conveying medium flowing back to the conveying pipe. The flow resistance disks are attached to the inner wall of the inner pipe and include an elliptical shape in the area of their engagement with the inner wall of the inner pipe. Each of the disks further include upstream and downstream surfaces that provide outlet and inlet openings relative to the conveying medium. The upstream side of the flow resistors is aligned so that an angle less than 90 degrees is formed with the longitudinal axis

of the inner pipe. According to one version, the flow resistors are an elliptical disk and in others a segment of an ellipse. The arrangement and angular alignment of same permits a resulting reduction of energy with respect to the conveying means, which is of great advantage.

The Muschelknautz reference cited by the Examiner is structurally quite different from the claimed invention. This reference describes the formation of an outlet opening for a bypass or inner pipe by means of a first radial cutout or tongue, made from the material of the inner pipe residing in the main conveying line and which is obliquely directed against the conveying flow. Downstream of the first pipe, a second tongue or cutout is deflected out of the pipe material in the same direction for forming an inlet opening. In the cited specification, it is described that energy reduction is to be achieved and pressure losses are to be avoided. In addition, it is seen that the conveying medium flowing in the inner pipe is nearly completely lost for conveying purposes.

The present invention as now claimed according to new Claim 20 recites specific structure which is not present in the cited reference. Specifically, Muschelknautz et al. fails to teach or recite flow resistance disks within the inner pipe having a geometry as presently claimed wherein the disks are attached to an inner wall of the inner pipe. No teaching or suggestion is provided in the cited reference for attaching the tongues to the inner wall of the inner pipe nor an elliptical shape in the area of their engagement. The tongues of the cited reference are merely tongue sections of the inner pipe and are not elliptical flow resistors as positively recited herein. Because these features are not present, there can be no anticipation under the Statute. Reconsideration is respectfully requested.

Claims 21-36 contain features in addition to those recited in Claim 20 and are therefore believed to be allowable for the same reasons.

Turning to the Section 112 rejections, Applicants have rewritten Claims 1-19, now canceled, into new Claims 20-36 to more clearly point out the present invention. These claims now cure all noted antecedent bases problems and has

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removed the use of unclear or imprecise language such as "preferably",
"approximately" and so forth. Reconsideration is respectfully requested.

In summary, it is believed the above-captioned patent application is now in
an allowable condition and such allowance is earnestly solicited.


If the Examiner wishes to expedite disposition of the above-captioned patent
application, he is invited to contact Applicant's representative at the telephone
number below.

The Director is hereby authorized to charge any additional fees associated
with this communication or credit any overpayment to Deposit Account No. 50-
0289.

Respectfully submitted,

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